

Present: Bai, Lin, Fischer, MacKay, Makdisi, Minty, Montag, Roser, Sandberg, Tepikian, Tsoupas, Zelenski, Zhang.

Fanglei presented results from tracking of a single particle in the AGS from $G\gamma = 43.5$ to 44.5 through two tune jumps to investigate any emittance blow-up. She compared three cases: no tune jump, regular tune jump of 0.04 with a jump quad each at I5 and L5, and the regular tune jump together with a strength offset at the I5 quad of 0.0135 m^{-2} . The last case simulates the situation of a tune jump in a lattice with errors.

She plotted the normalized action of the tracked particle using the lattice parameters at that time. This observable should be constant under adiabatic conditions but can change up or down under non-adiabatic conditions. The results show no action changes in the horizontal plane for a 50 turn tune jump and significant action change for a 1 turn tune jump, as expected. In the vertical plane with an unperturbed tune of 8.99 there is significant action change for both the 1 turn and 50 turn tune jump. This is problematic and needs to be investigated further. It would be good to look carefully at the beta functions to see whether the beta waves are as expected from the strength of the tune jump quads. A simulation with a vertical tune of 8.98 would be also useful to test whether better adiabaticity can be achieved.

The case with the simulate lattice error (case 3) does not show a significantly different situation. This may be due to fact that the actual error used in the tracking was 10 times smaller than 0.0135 m^{-2} as was pointed out during the presentation and seems to follow from slide 4.

Arlene then presented the design of the power supply for the AGS tune jump quads. The design is quite complete giving the required performance. Further cost optimization may be possible.

Thomas for Haixin